

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 07157/287376	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2005/001710	International filing date (day/month/year) 20/01/2005	(Earliest) Priority Date (day/month/year) 21/01/2004
Applicant EMORY UNIVERSITY		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 8 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☒ **Unity of invention is lacking** (see Box III).

4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

COMPOSITIONS AND USE OF TYROSINE KINASE INHIBITORS TO TREAT PATHOGENIC INFECTION

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the **drawings** to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☒ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2005/001710

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61P31/04 A61P31/12 A61K31/506 A61K31/519 A61K31/517
A61K31/505 A61K31/496

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, EMBASE, WPI Data, CHEM ABS Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 03/035049 A (AB SCIENCE; MOUSSY, ALAIN; KINET, JEAN-PIERRE) 1 May 2003 (2003-05-01)	1,2,4,5, 10,12, 18,20, 23-25
Y	the whole document	1-3,6-22
P,X	WO 2004/026311 A (INSTITUT GUSTAVE ROUSSY ; ZITVOGEL, LAURENCE; AUCLAIR, CHRISTIAN; TURS) 1 April 2004 (2004-04-01) page 15, lines 11-22	1-5,11, 13-15, 23-25
Y	EP 0 564 409 A (CIBA-GEIGY AG; NOVARTIS AG; NOVARTIS-ERFINDUNGEN VERWALTUNGSGESELLSCHA) 6 October 1993 (1993-10-06) page 5, lines 1-27	3,14,15, 19
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

23 September 2005

Date of mailing of the international search report

26. 10. 2005

Name and mailing address of the ISA

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Collura, A

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2005/001710

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>TANG P ET AL: "Listeria monocytogenes, an invasive bacterium, stimulates MAP kinase upon attachment to epithelial cells"</p> <p>MOLECULAR BIOLOGY OF THE CELL 1994 UNITED STATES, vol. 5, no. 4, 1994, pages 455-464, XP002331177 ISSN: 1059-1524 abstract page 457, left-hand column, last paragraph page 458, left-hand column, last paragraph page 462, left-hand column, paragraph 1</p>	12,18,19
Y	<p>DUMENIL G ET AL: "Interferon 'alpha' inhibits a Src-mediated pathway necessary for Shigella- induced cytoskeletal rearrangements in epithelial cells"</p> <p>JOURNAL OF CELL BIOLOGY 16 NOV 1998 UNITED STATES, vol. 143, no. 4, 16 November 1998 (1998-11-16), pages 1003-1012, XP002331178 ISSN: 0021-9525 page 1010</p>	3,12,18, 19
Y	<p>SELBACH M ET AL: "Src is the kinase of the Helicobacter pylori CagA protein in vitro and in vivo"</p> <p>JOURNAL OF BIOLOGICAL CHEMISTRY 01 MAR 2002 UNITED STATES, vol. 277, no. 9, 1 March 2002 (2002-03-01), pages 6775-6778, XP002331179 ISSN: 0021-9258 abstract page 6778</p>	3,12,18, 19
Y	<p>QIE L ET AL: "Herpes Simplex Virus Entry Is Associated with Tyrosine Phosphorylation of Cellular Proteins"</p> <p>VIROLOGY, ACADEMIC PRESS, ORLANDO, US, vol. 256, no. 2, 10 April 1999 (1999-04-10), pages 220-227, XP004439971 ISSN: 0042-6822 page 223</p>	11,13,14

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2005/001710

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	VANICHKIN A ET AL: "LATE ADMINISTRATION OF A LIPOPHILIC TYROSINE KINASE INHIBITOR PREVENTS LIPOPOLYSACCHARIDE AND ESCHERICHIA COLI-INDUCED LETHAL TOXICITY" JOURNAL OF INFECTIOUS DISEASES, CHICAGO, IL, US, vol. 173, no. 4, April 1996 (1996-04), pages 927-933, XP002048356 ISSN: 0022-1899 abstract	12,18
X	EP 1 201 765 A (AXXIMA PHARMACEUTICALS AKTIENGESELLSCHAFT) 2 May 2002 (2002-05-02) table 1	1-3,6, 10,13-15
X	HUANG M ET AL: "Inhibition of Bcr-Abl kinase activity by PD180970 blocks constitutive activation of Stat5 and growth of CML cells" ONCOGENE 12 DEC 2002 UNITED KINGDOM, vol. 21, no. 57, 12 December 2002 (2002-12-12), pages 8804-8816, XP002346291 ISSN: 0950-9232	2
Y	page 8806, left-hand column, paragraph 1	1,3,6-8, 10-16, 18-22
X	DORSEY J F ET AL: "Interleukin-3 protects Bcr-Abl-transformed hematopoietic progenitor cells from apoptosis induced by Bcr-Abl tyrosine kinase inhibitors" LEUKEMIA 2002 UNITED KINGDOM, vol. 16, no. 9, 2002, pages 1589-1595, XP002346292 ISSN: 0887-6924	2
Y	abstract	1,3,6-8, 10-16, 18-22
	table 1	
Y	KRAKER A J ET AL: "Biochemical and cellular effects of c-Src kinase-selective pyrido[2,3-d]pyrimidine tyrosine kinase inhibitors" BIOCHEMICAL PHARMACOLOGY 01 OCT 2000 UNITED STATES, vol. 60, no. 7, 1 October 2000 (2000-10-01), pages 885-898, XP002346293 ISSN: 0006-2952 cited in the application the whole document	1-3,6-8, 10-16, 18-22

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2005/001710

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 01/45751 A (THE SCRIPPS RESEARCH INSTITUTE) 28 June 2001 (2001-06-28) the whole document	1-3, 6-8, 10-16, 18-22
Y	US 6 596 746 B1 (DAS JAGABANDHU ET AL) 22 July 2003 (2003-07-22) claims 43, 47 column 22, last paragraph - column 23	1-3, 9-14, 17-19

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2005/001710

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 1-25
because they relate to subject matter not required to be searched by this Authority, namely:
Although claims 1-25 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
1-3 (part.), 4-8, 9-15 (part.), 16, 17-20 (part.) 21-25
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-3 (part), 4,5,10-15 (part), 18-20 (part), 23, 24, 25

Use of pyrimidine derivatives for the manufacture of a medicament for treating bacterial or viral infections.

2. claims: 1-3 (part), 6-8, 10-15 (part), 16, 18-20 (part), 21, 22

Use of a pyrido[2,3-d]pyrimidine for the manufacture of a medicament for treating bacterial or viral infections.

3. claims: 1-3, 9-14, 17-19 (all partially)

Use of ZD6474, gefinitib or erlotinib for the manufacture of a medicament for treating bacterial or viral infections.

4. claims: 1-3, 9-14, 17-19 (all partially)

Use of ZK222584 for the manufacture of a medicament for treating bacterial or viral infections.

5. claims: 1-3, 9-14, 17-19 (all partially)

Use of CP547632 for the manufacture of a medicament for treating bacterial or viral infections.

6. claims: 1-3, 9-14, 17-19 (all partially)

Use of BMS354825 for the manufacture of a medicament for treating bacterial or viral infections.

7. claims: 1-3, 9-14, 17-19 (all partially)

Use of SU11248 for the manufacture of a medicament for treating bacterial or viral infections.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2005/001710

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03035049	A	01-05-2003	CA 2461181 A1 EP 1450775 A2 JP 2005507916 T	01-05-2003 01-09-2004 24-03-2005
WO 2004026311	A	01-04-2004	AU 2003276351 A1 FR 2844452 A1	08-04-2004 19-03-2004
EP 0564409	A	06-10-1993	AT 188964 T AU 3569493 A CA 2093203 A1 CN 1077713 A CY 2229 A CZ 9300560 A3 DE 10299016 I1 DE 59309931 D1 DK 564409 T3 ES 2142857 T3 FI 931458 A GR 3032927 T3 HU 64050 A2 IL 105264 A JP 2706682 B2 JP 6087834 A KR 261366 B1 LU 90908 A9 MX 9301929 A1 NL 300086 I1 NO 931283 A NZ 247299 A PT 564409 T RU 2125992 C1 SG 43859 A1 SK 28093 A3 ZA 9302397 A	15-02-2000 07-10-1993 04-10-1993 27-10-1993 18-04-2003 16-02-1994 29-08-2002 24-02-2000 19-06-2000 01-05-2000 04-10-1993 31-07-2000 29-11-1993 11-04-1999 28-01-1998 29-03-1994 01-08-2000 30-04-2003 29-07-1994 01-05-2002 04-10-1993 26-07-1995 30-06-2000 10-02-1999 14-11-1997 06-04-1994 04-10-1993
EP 1201765	A	02-05-2002	NONE	
WO 0145751	A	28-06-2001	AU 781444 B2 AU 2740001 A BR 0016547 A CA 2395136 A1 CN 1434727 A EP 1250155 A1 HU 0203957 A2 JP 2003518077 T NO 20023036 A PL 356815 A1 SK 8492002 A3 US 2003130209 A1	26-05-2005 03-07-2001 29-10-2002 28-06-2001 06-08-2003 23-10-2002 28-03-2003 03-06-2003 22-07-2002 12-07-2004 06-11-2002 10-07-2003
US 6596746	B1	22-07-2003	US 2004024208 A1 US 2004077875 A1 US 2004073026 A1 US 2004054186 A1	05-02-2004 22-04-2004 15-04-2004 18-03-2004